

Carbon Funds Outlook

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List of Acronyms

AAU	-	Assigned Amount Unit
CCS	-	Carbon Capture and Storage
CDM	-	Clean Development Mechanism
CDM EB	-	CDM Executive Board
CER	-	Certified Emission Reduction
DOE	-	Designated Operational Entity
EC	-	European Commission
ERPA	-	Emission Reduction Purchase Agreement
ERU	-	Emission Reduction Units
ETS	-	Emission Trading Scheme
EU	-	European Union
EUA	-	European Union Allowance
GHG	-	Greenhouse Gas
JI	-	Joint Implementation
MEP	-	Member of the European Parliament
PoA	-	Programme of Activities
REDD	-	Reducing Emission from Deforestation in Developing Countries
RGGI	-	Regional Greenhouse Gas Initiative
UN	-	United Nations
UNEP	-	United Nations Environment Programme
UNEP Risoe	-	UNEP Centre on Energy, Climate and Sustainable Development
UNFCCC	-	United Nations Framework Convention on Climate Change
WCI	-	Western Climate Initiative
VER	-	Voluntary Emission Reduction

Abstract

Could the financial crisis be beneficial to existing carbon funds? What are the other main factors that will be decisive for the evolution and performance of carbon funds in the near future?

Carbon funds have become an important player in the carbon markets over the past few years and have experienced considerable growth both in terms of the number of vehicles and the amount of capital raised. However, the amount of capital secured or targeted by funds created over the last two years appears to be slowing down. Indeed, the lack of clarity on the post 2012 climate policy framework at international and domestic levels, increasing competition on the buyers' side, and the decline in the number of large and low risk Clean Development Mechanism (CDM) projects create a challenging and uncertain environment for new entrants in the carbon finance community. This situation will likely be exacerbated by the credit crisis, which could reduce the amount of capital available to invest in carbon credit projects and increase the cost of capital available. But current financial difficulties can also create opportunities for some of the existing carbon funds that can benefit from a competitive advantage *vis-à-vis* other investors.

Therefore, the future of the carbon fund market is complex and uncertain. However, faced with these increasing challenges, whether carbon vehicles will come out as winners or losers will mainly depend on their investment strategy and their flexibility to adapt. This paper aims to address these issues through detailed analysis of the current market context and the historical evolution of carbon funds.

Executive Summary

During the past few months, the global financial crisis has intensified considerably. Starting from the credit crunch in the real estate sector, the crisis has rapidly spread across the financial sector and into the rest of the economy. Like other commodity markets, the carbon market is being affected and its participants—investors, developers, and lenders—are suffering from a dramatic increase in risk adverse behaviour and a restricted availability of capital. In addition, carbon markets participants are facing an uncertain environment in terms of future developments in domestic and international climate policy frameworks and the challenges associated with moving emission reduction projects through the United Nations (UN) cycle. This paper aims to explore what this investment environment means for carbon procurement vehicles; one of the main types of carbon finance investor.

A carbon procurement vehicle (or carbon fund) is a collective investment scheme which receives money from investors and uses this money to buy carbon credits from, or invest into, greenhouse gas (GHG) emissions reduction projects, generally through the Kyoto Protocol's CDM and Joint Implementation (JI) schemes. After a certain defined period, the carbon fund will then give investors carbon credits and/or cash in return. The emission reduction projects can be sourced from different developers, countries, and technologies.

Over the last decade, carbon funds have evolved to become important participants in the global carbon market. So far, their role and scope of activity have been continuously on the rise, with some periods of unprecedented growth. Yet, while the number of vehicles has risen by about 20 percent every year, the amount of capital secured has not been keeping pace. As illustrated in Figure 1, this is one of the trends that reflect the complexity of the environment in which carbon

funds operate and shows how their creation and performance are shaped by multiple simultaneously occurring factors.

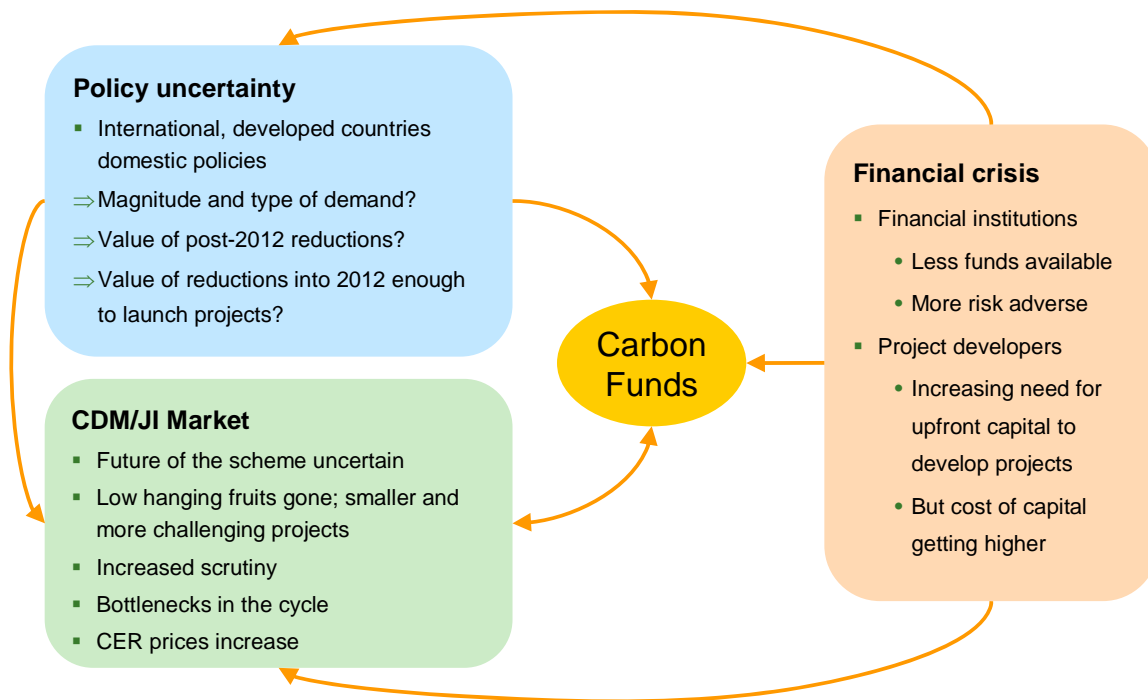


Figure 1: Overall context and the factors influencing carbon funds

Impact of Post-Kyoto uncertainties

The development of carbon funds has been characterised by the types of players that have successively entered the market. Initially, multi-shareholder carbon funds managed by development banks emerged followed by governmental programmes. As the market matured, purely private initiatives progressively took the lead. Because of their specific procurement and risk management procedures, government vehicles have focused more on Emission Reduction Purchase Agreements (ERPAs) while private funds have concentrated on direct investment in carbon related projects.

Uncertainties surrounding the policy fundamentals driving the demand for carbon instruments in the post-2012 period make it challenging to value emission reductions expected to be delivered beyond 2012. As we get closer to this deadline, the incremental revenue that project developers can obtain from the sale of carbon credits is getting too thin to provide necessary guarantees to investors. This is having an impact on any decision to invest in CDM or JI projects through ERPAs for credits delivered only until the end of 2012. Therefore, project developers will be increasingly searching for investors with the ability to take on post-2012 risks. In addition, investors will be looking for more direct investment in projects so as to diversify their revenues beyond the pure carbon credit stream. Accordingly, government procurement and vehicles investing mainly through ERPAs in pre-2013 CDM/JI credits will be put at a competitive disadvantage compared to investors with more flexibility and appetite for post-2012 risks.

Impact of credit crisis

Carbon markets are turning towards private funds focused on direct investment in CDM/JI projects just as the financial crisis is beginning to affect the credit market. The crisis will reduce the amount of capital available to new carbon funds as it will limit the ability of these funds to leverage their equity investment. In addition, the credit crisis is likely to increase the cost of capital to these new carbon funds. In this context, and considering that off-take alone is often no longer sufficient, existing carbon funds with secured capital and the mandate to provide direct financing could be well positioned to fill a vital need at this critical time.

Impact of the CDM/JI market

The boom of investments in CDM has primarily been driven by the price differential between CDM credits—Certified Emission Reductions (CERs)—and European Union Allowances (EUAs), and between primary and secondary markets for carbon credits. In this market, carbon funds have represented a good investment option as other ways of originating carbon credits can be more risky (e.g., direct project development or financing of emission reduction projects). Presently, the price differential continues to act as a driver for purchasing carbon credits compared to allowances, but the spread has reduced considerably. Also, a number of other factors are now affecting the CDM/JI market, thereby reducing the attractiveness of this type of investment. This year has seen downward revisions of CDM/JI credits supply forecasts. Increased scrutiny at validation, registration, and verification stages combined with a capacity crunch within Designated Operational Entities (DOEs) and the CDM Executive Board (CDM EB) has led to a significant increase in the time required to register a project. In addition, the “low-hanging fruit” projects have been grasped: CDM and JI project opportunities are smaller, riskier, and costlier now, making it challenging to keep up with expected growth of the credit supply.

Future repercussions for carbon funds

In the course of a detailed analysis, ICF has reached the following conclusions concerning the evolution of carbon vehicles and the carbon market in general:

- **The financial crisis is going to have a larger impact on newly created carbon funds.**

Carbon funds launched recently will probably suffer from the overall lack of financial resources and the increased cost of capital. This might prevent some of them from actually being created or from reaching their target size.

- **The creation of new funds will likely slow down.**

Although the number of carbon funds in the market has grown steadily over the last few years, the secured capital under their management has increased at a much lower rate than in the past. Taking into consideration the turmoil in the financial markets and the lack of clarity about the post-Kyoto international climate regime, investors are likely to wait for clear market signals before launching a new vehicle.

- **Compliance buyers and banks adopting a more conservative approach will leave opportunities for carbon funds to seize.**

In the current context, certain compliance buyers and financial institutions will be less inclined to deal with increasingly small projects and companies potentially short of cash

and/or with a lower credit rating. This will unleash opportunities for carbon funds that have the ability to take on more risks and/or provide pre-payment.

- **New cap-and-trade schemes, provided they come into effect, might result in funds being set up to serve buyers beyond Europe.**

Independently from the post-Kyoto negotiations, several countries have announced that they plan to introduce their own cap-and-trade schemes that will allow, to some extent, carbon credits as a compliance option. Once these new programs become operational, it is likely that the demand for international credits will surge, opening opportunities for new carbon vehicles probably managed by local agents and serving these specific—and increasingly fragmented—markets.

- **Direct financing will likely play a larger role in carbon fund strategies.**

Direct financing has been gaining importance steadily as investors and developers have faced growing difficulties in finding robust projects that yield large quantities of credits on an off-take basis at attractive prices. The carbon market needs more investors that are willing to contribute equity at an early stage of project development. Carbon funds with adequate investment rules are placed ideally to fill such a gap.

- **Carbon funds are starting to diversify their investment portfolio.**

In the face of uncertainties around the future CDM/JI market, carbon funds have started to consider sourcing other types of credits such as EUAs or Voluntary Emission Reductions (VERs), as well as investing in clean technologies outside the scope of the CDM/JI. Through such actions, funds are opening themselves up to a wider range of sectors and investors. Direct financing through equity investment in emission reducing projects will also contribute to revenue diversification.

1. Introduction

The following analysis was developed as a continuation of ICF's study *ICF International's Carbon Procurement Vehicles Investor's guide 2007* (ICF 2007). This year's update looks at the newly created carbon funds, in particular, as well as the historical evolution and future trends of the carbon fund market.

Most of the information collected comes from publicly available sources on the Internet including each fund's Web site, which results in a varied level of detail among identified funds.

Defining Carbon Funds

In this document, the term "carbon fund" or "carbon vehicle" refers to a collective investment scheme that receives money from investors and uses this money to buy carbon credits from, or invest into greenhouse gas (GHG) emissions reduction projects, generally CDM and JI. After a certain defined period, the carbon fund will then give investors carbon credits and/or cash in return. The emission reduction projects can be sourced from different developers, countries, and technologies.

This study is a summary of information collected for 84 carbon funds that are either operational (i.e., are now closed to investors), or are actively raising funds (Appendix 6.1). This includes:

- “Strictly defined” carbon funds that operate as trust, mutual, or venture capital funds
- Carbon facilities, which do not just pool investors’ money to purchase carbon credits, but facilitate the generation of carbon credits through a professional management of the complex CDM/JI project cycle
- Governmental direct carbon procurement programs or tenders which are mechanisms used by governments of Annex I countries to the Kyoto Protocol to source carbon through different carbon sourcing methods

Carbon funds can be initiated and managed by development banks, governmental agencies, private financial institutions, or consultancies. In terms of investors, ICF identifies the following types of shareholder structures: government(s), private firm(s), or a mix of both (multi-shareholder). Figure 2 presents, as an example, some of the carbon funds grouped according to their fund manager and shareholder structure.

SHAREHOLDERS = PRIVATE FIRMS & GOVERNMENTS		SHAREHOLDERS = GOVERNMENTS			SHAREHOLDERS= PRIVATE FIRMS
MANAGED BY DEVELOPMENT BANKS <ul style="list-style-type: none"> ▪ Baltic Sea Region Testing Ground Facility (TGF) • CAF-Spain Carbon Initiative • KfW Carbon Fund • KfW-EIB Carbon Programme • Prototype Carbon Fund • BioCarbon Fund • Italian Carbon Fund • Carbon Fund for Europe 	MANAGED BY PRIVATE FIRMS <ul style="list-style-type: none"> ▪ Japan Greenhouse Gas Reduction Fund • Japan Carbon Facility • CARE Brazil Social Carbon Fund • Multilateral Carbon Credit Fund • NEFCO Carbon Fund • Post 2012 Carbon Fund • Sustain Capital Carbon Fund 	MANAGED BY DEVELOPMENT BANKS <ul style="list-style-type: none"> ▪ Netherlands CDM Facility • CAF-Netherlands CDM Facility • Netherlands European Carbon Facility • IFC-Netherlands Carbon Facility • Netherlands Emissions Reduction Co-operation Fund 	MANAGED BY PRIVATE FIRMS <ul style="list-style-type: none"> ▪ Rabobank-Dutch Government Carbon Facility • EcoSecurities-Standard Bank Denmark Carbon Facility • Austrian CDM Project and CER Sale Facility Agreement • Austrian JI/CDM Programme • Kyoto mechanism Credit Acquisition Programme 	MANAGED BY GOVERNMENTAL AGENCIES <ul style="list-style-type: none"> ▪ ERUPT • CERUPT • Swedish CDM/JI Programme • Danish Carbon.dk • Belgian JI/CDM Tender • Flemish JI/CDM Tender • Finnish CDM/JI Pilot Programme • Finnder Programme 	MANAGED BY PRIVATE FIRMS <ul style="list-style-type: none"> ▪ Greenhouse Gas-Credit Aggregation Pool • European Carbon Fund • Trading Emissions PLC • Merzbach Mezzanine Carbon Fund 1 • Climate Change Capital Carbon Fund I & II • ICECAP • Grey K Environmental Fund

Figure 2: Sample of vehicles classified according to their fund manager and shareholder structure

2. Carbon funds: market overview

Based on market activity during the first half of 2008, the global carbon market is expected to have grown by more than 50 percent by the end of the year compared to 2007. The total traded value could exceed \$100 billion (€68 billion) in 2008 versus \$64 billion (€44 billion) last year.

Following the bullish trend of carbon markets, carbon funds have also been experiencing unprecedented growth, both in terms of number of vehicles and size of secured capital. Figure 3 presents how carbon investment vehicles have been evolving over the years.

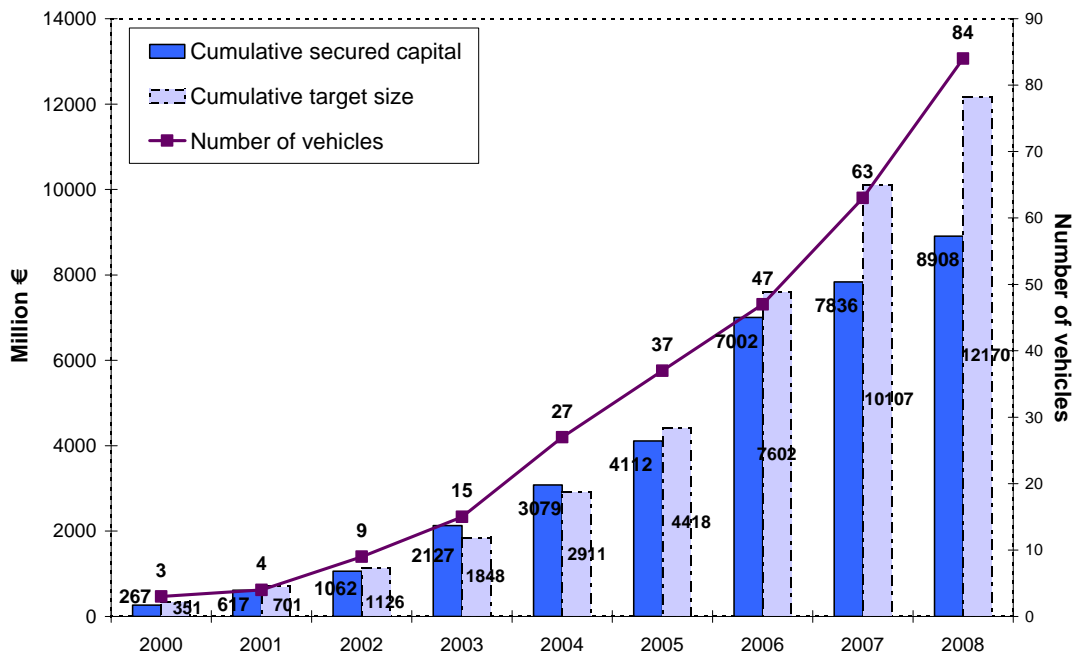


Figure 3: Evolution of carbon vehicles both in terms of number and capital amassed and targeted¹

So far, ICF has identified 84 carbon vehicles that have amassed altogether a total capital of €8,908 million². These numbers are convergent with those presented in the latest edition of *Carbon Funds Directory* by Environmental Finance Publications (Carbon Finance 2008). According to the report, the operational carbon vehicles have committed to amass \$12.87 billion (€8.77 billion), while those actively raising capital were estimated to bring an additional \$5.49 billion (€3.74 billion).

In addition, as shown in Figure 3, even though the number of carbon vehicles is continuously increasing, the rise in secured capital is slowing down. This trend is largely due to a number of factors affecting the attractiveness of the CDM/JI market, including a decreasing number of projects and resulting credits, uncertainty over the post-2012 climate regime, and recent turbulences on the financial markets. These aspects are further developed in Section 4. All these, and other issues, leave the future development of the carbon fund market uncertain.

Nonetheless, new funds are still being announced³. Whether they find their place in the market will depend on several factors, including the size of governments' Assigned Amount Unit (AAU) allocations/purchases, possible demand for CERs/Emission Reduction Units (ERUs) from new cap-and-trade schemes in the world, voluntary market developments, as well as conditions in the investment market after the recent credit crunch and its effects on the whole economy.

¹ Data on capital size (either targeted or secured) was mainly drawn from each fund's Web site and *Mission Climat – Carbon Investment Funds* (Caisse des Dépôts 2007).

² Almost 20 percent of vehicles have not disclosed information on capital secured. About 6 percent of vehicles have not set a target size. For these, zero capital was assumed.

³ In the course of writing this report a few more funds were announced. They are listed in Appendix 6.2

3. Carbon fund operations: where, what, who, and how?

3.1. Geographies

Since the Kyoto Protocol came into force, operators from the European Union (EU) have been leading the demand for carbon credits, both in transaction volume and monetary value (World Bank 2008). This year the trend remains—the EU Emission Trading Scheme and the EU Member States are still the largest buyers of carbon credits. Accordingly, more than half of all carbon investment vehicles have been launched and managed in Europe, with the United Kingdom as a leader (Figure 4).

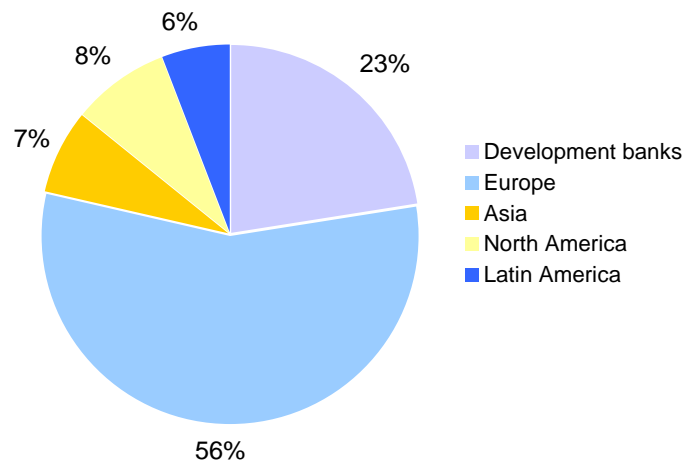


Figure 4: Geographical distribution of fund managers

European entities and development banks⁴ have been the main initiators of carbon funds from the early years of carbon market activity. Nevertheless, other players have been entering the market gradually (Figure 5). On one side of the spectrum, these new entrants are from developed countries interested in purchasing credits for compliance (e.g., Japan Greenhouse Gas Reduction Facility) or capital gains (e.g., U.S. Merzbach Carbon Finance). On the other side, an increasing number of players from developing countries aim to take greater advantage of the Kyoto mechanism by aggregating credits for sale (e.g., Sustain Capital Carbon Fund and Sri Lanka Carbon Fund).

⁴ NB: a large share of the capital managed by development banks is coming from European entities.

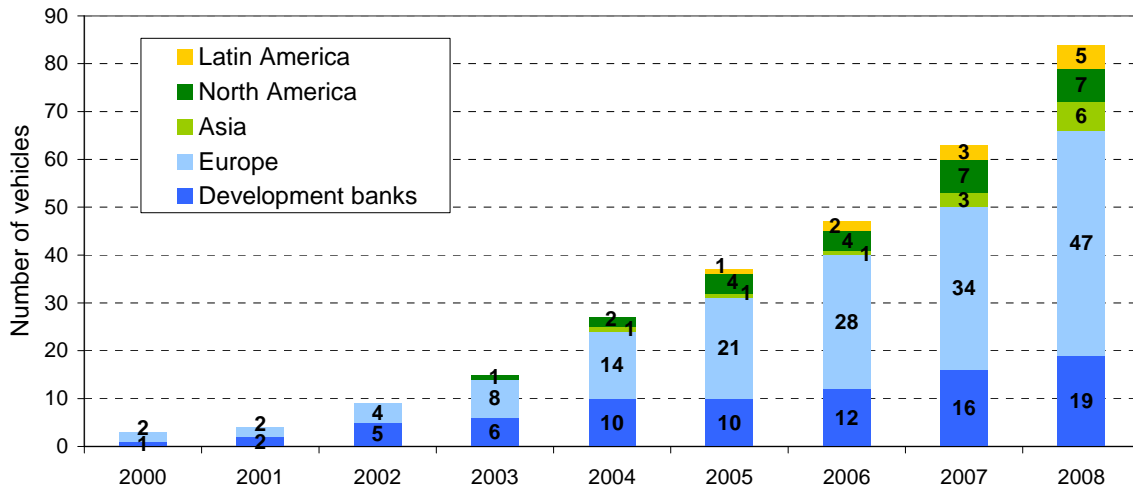


Figure 5: Evolution of carbon vehicles by origin of fund manager over time

3.2. Behind the vehicle name

More than half of all carbon vehicles are managed by private entities. Almost one third of these carbon vehicles is in hands of development banks, of which 13 percent belong to the World Bank—the biggest individual manager of carbon funds. Government agencies manage the remaining 17 percent of all carbon funds (Figure 6).

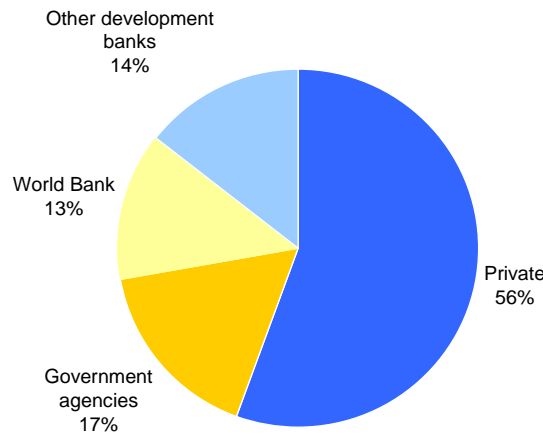


Figure 6: Distribution of carbon funds according to their fund manager

3.2.1. Vehicle investor structure and capital origin

In terms of participant structure, governmental entities have been prevailing since the beginning of the carbon market. However, in 2007 there was a real shift in momentum towards exclusively private vehicles, which have grown from 1 in 2003 to 20 in 2007 and 30 in 2008.

Initially, growth of investments in carbon funds stemmed from the carbon credit needs of entities covered by the compliance carbon market (i.e., individual companies and governments in the EU and other countries with legally binding emission reduction targets under the Kyoto

protocol). But with time, investors seeking capital gains have come into the market. Thus, in 2008 the number of purely-private vehicles has finally exceeded the number of governmental and multi-shareholder initiatives (Figure 7).

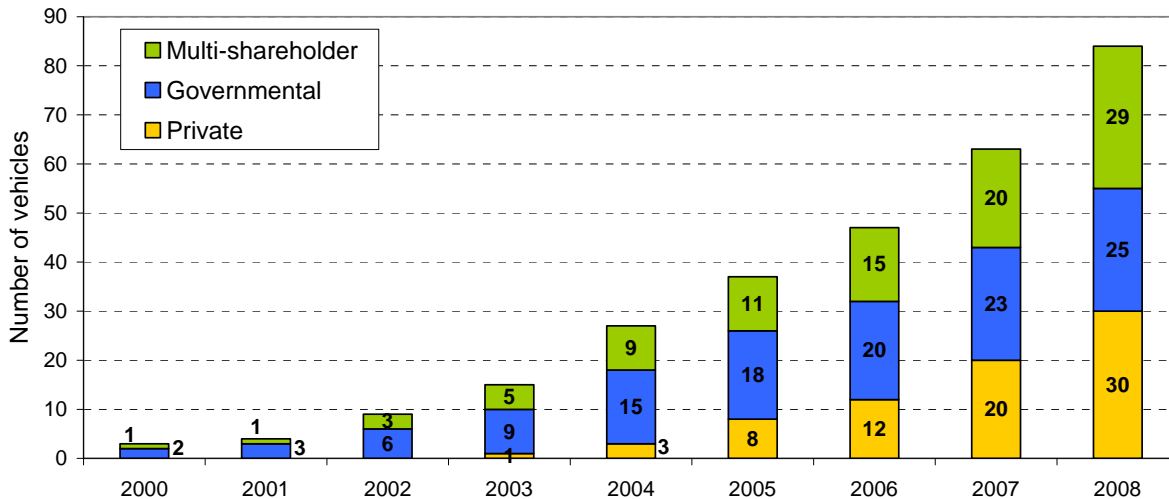


Figure 7: Evolution of carbon vehicles by investor structure over time

Before 2004, capital came mainly from governmental sources, with some private investment concentrated in multi-shareholder vehicles. While public investment continues to increase steadily, the trends demonstrated in Figure 8 show that purely-private funds have outpaced investment in purely governmental initiatives. However, since the data available for the capital amassed ends in 2007 (i.e., most of the funds launched in 2008 have not disclosed information on the amount of secured capital), then the question arises if and how the recent credit crunch will affect this evolution in coming years (see analysis in Section 4).

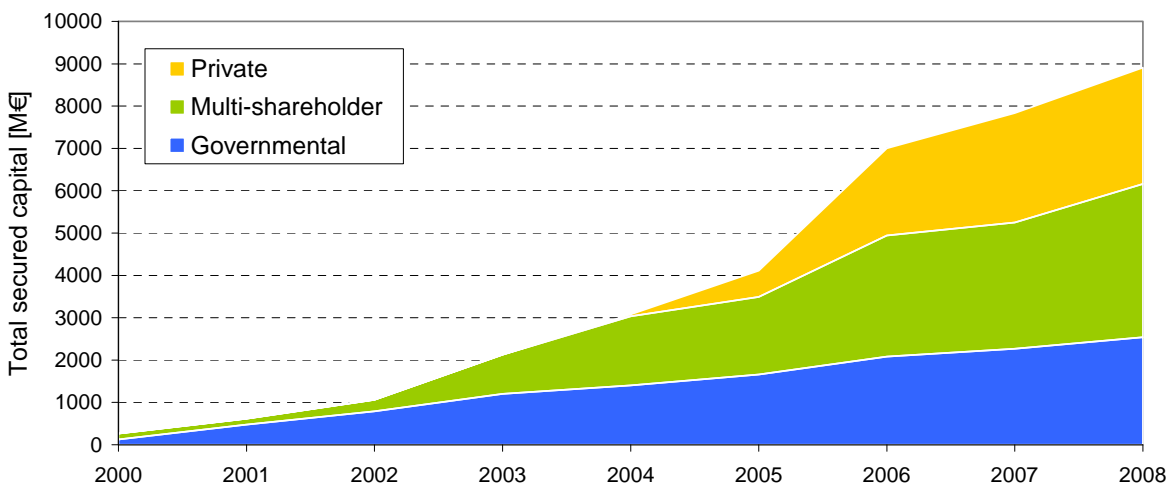


Figure 8: Evolution of investment capital by investor type

3.2.2. Investment approach

Funds exhibit different levels of financial involvement in emission reduction projects. Originally, most of the funds were sourcing carbon credits through ERPAs with payment on delivery. ERPAs are contractual arrangements with the project sponsors for the off-take of the generated carbon credits. Such an agreement poses different risks for each of the transaction parties. For instance, if a seller delivers fewer credits than anticipated, revenues and returns on the capital invested will be affected negatively. Simultaneously, by earmarking money for expected future payments, a buyer faces lost investment opportunities that could have compensated the delivery gap.

In the last few years, the new generation of funds has moved towards the direct financing of projects (e.g., through equity investments, loans). In this way, the fund can obtain carbon credits at the lowest price possible. The contractual arrangements put in place by these funds vary case-by-case and are determined in the investment term sheets. For example, a fund that provides equity together with other investors will become the owner of only a portion of the carbon credits and can purchase additional carbon credits at a discounted price. Another example is a financial loan based on the future proceeds of the CERs/ERUs sales.

Overall, there are less carbon funds providing direct financing (right diagram in Figure 9), but their share has been increasing over the past few years (left diagram in Figure 9). This is due to a number of inter-related factors:

- A large share of the “low hanging fruit” projects has already been developed, and there is an increasing competition for the purchase of credits from robust projects generating large quantities of credits at a low price.
- CER prices are increasing globally, in particular for primary CERs (i.e., CERs that have been acquired directly from a project and not from an intermediary). This is leading carbon funds to look for more cost effective—although riskier—alternatives.
- With new and smaller developers entering the market, access to classic project finance for an average carbon credit project is getting more challenging. Lenders consider future carbon revenue streams insufficient and/or too risky to lend against.
- Fund managers have built capacity internally and are more able to be involved early in the process and to assess project risk.

As a result, investors are pushed towards higher risk projects that require more capital (e.g., renewables). This leads to investors having a greater involvement in the project development process.

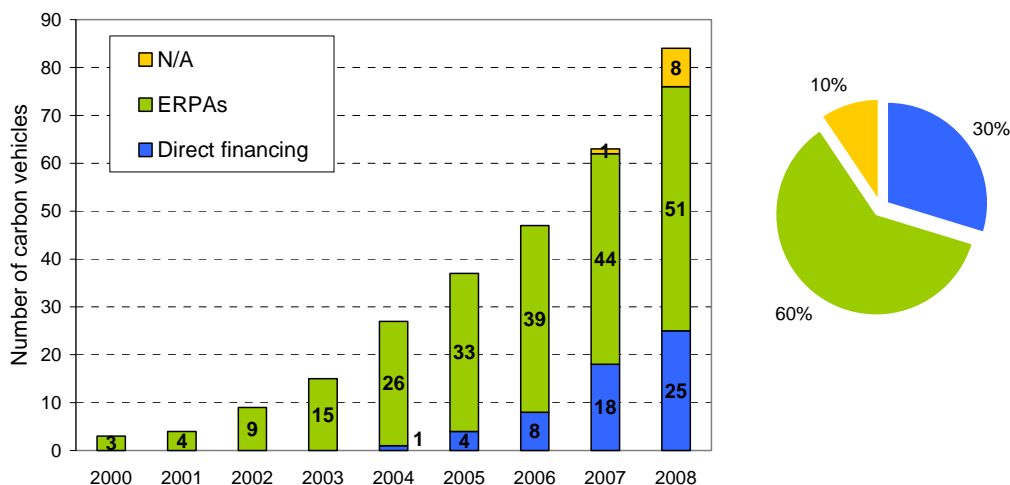


Figure 9: Evolution of carbon vehicles in number according to financial involvement

As shown in Figure 10 (top diagram), cumulative gathered capital by vehicles directly investing in projects has not risen as fast as the number of funds itself (Figure 9). However, the historical trend (bottom diagram, Figure 10) demonstrates that this type of financial involvement accounts for a higher proportion of total investment each year.

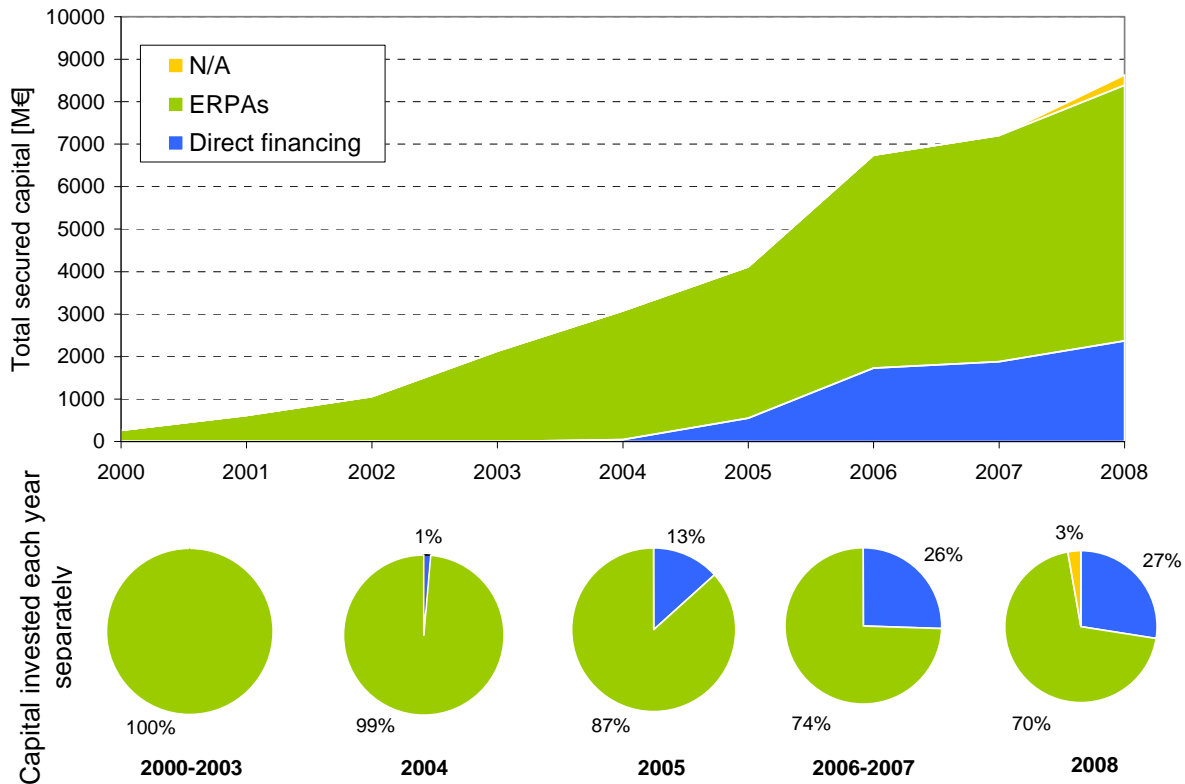


Figure 10: Evolution of carbon vehicles in capital secured according to financial involvement⁵

Multi-shareholder and purely governmental funds have been rather cautious while investing money. They have taken a leading position in signing ERPAs, which is a safer way to gain credits than putting equity in at the early stages of project development. In contrast, purely private funds have dominated the direct financing component of the market. Being less constrained by public scrutiny and trying to maximize their investment returns, they are able to take greater risk (Figure 11).

⁵ N/A stands for vehicles without specified target size. They have been launched in 2008 and are actively raising capital.

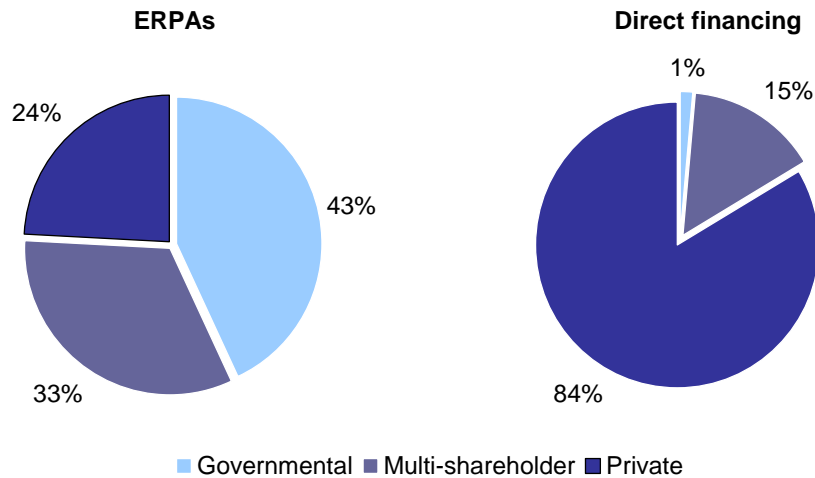


Figure 11: Distribution of investor type according to financial involvement

3.2.3. Investment target

Figure 12 presents the distribution of secured capital of carbon vehicles according to the project types they invest in. Carbon vehicles are mainly interested in sourcing credits from both CDM and JI projects while vehicles investing only in either CDM or JI are relatively uncommon.

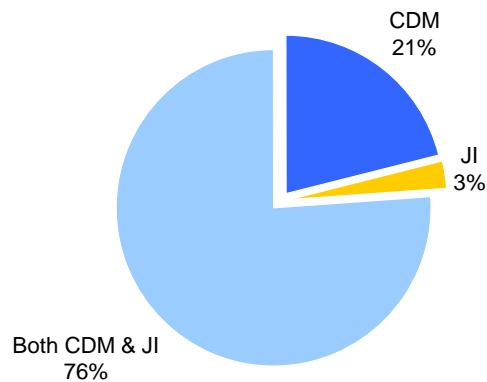


Figure 12: Distribution of carbon funds according to project type

This notion of spreading investment across both Kyoto flexible mechanisms balances the overall risk of a fund portfolio. Indeed, project development paths for CDM and JI present different risk/reward profiles. Investors and developers are better accustomed to the CDM process for which clear rules and procedures have been established, but the time and resources involved in the project registration increase investment risks. JI on the other hand, although it entails an easier and quicker registration process (Track 1), still lacks clear and transparent procedures within host countries. Once these have stabilised, JI is likely to attract more carbon market participants.

3.3. Projects types within the investment portfolios of carbon vehicles

3.3.1. General trends in the CDM/JI markets

Global investment in clean technologies reached \$5.8 billion (€4.27 billion) in 2006, representing a 58 percent growth rate compared to the previous year (CCM 2007). 2007 continued to be another strong year for their development. Whilst in the past there were criticisms that renewable energy did not get enough attention from the Kyoto mechanisms in favour of low-cost emissions reduction projects, it is now no longer the case. More than half of the 1,151 registered projects in the CDM pipeline are now in the renewable energy sector (UNEP-Risoe 2008).

3.3.2. Trends in projects targeted by carbon vehicles

In 2007, Caisse des Dépôts conducted an analysis to identify the types of projects present in the different funds' portfolios. To do so, they correlated the distribution of CDM/JI projects among carbon vehicles with the UNEP-Risoe CDM/JI pipeline database of August 27, 2007 (Figures 13 and 14).

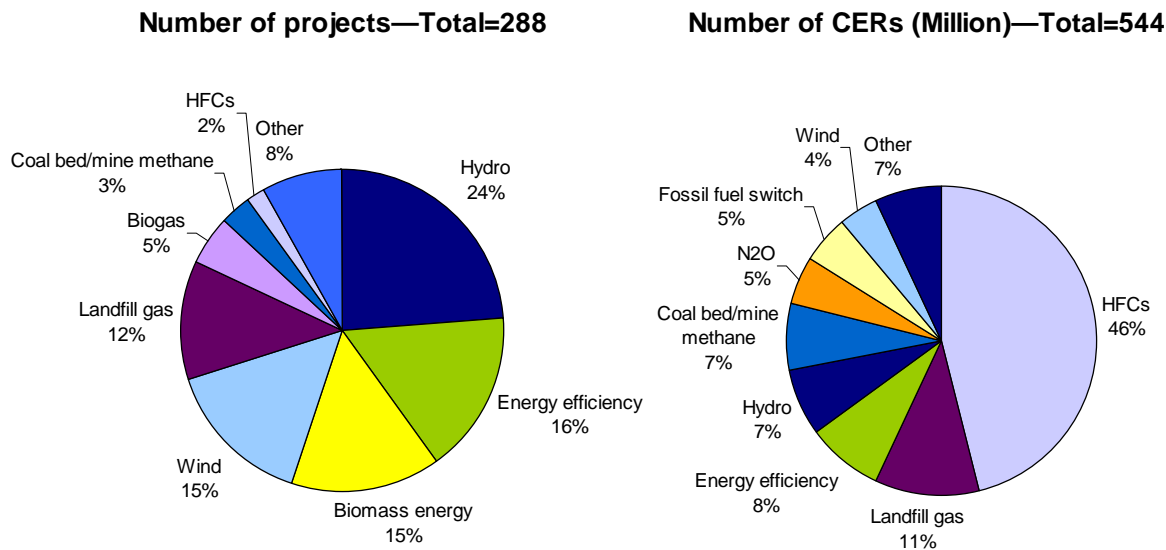


Figure 13: Distribution of CDM projects by type (source: Caisse des Dépôts 2008)

Number of projects—Total=102

Number of ERUs (Million)—Total=58

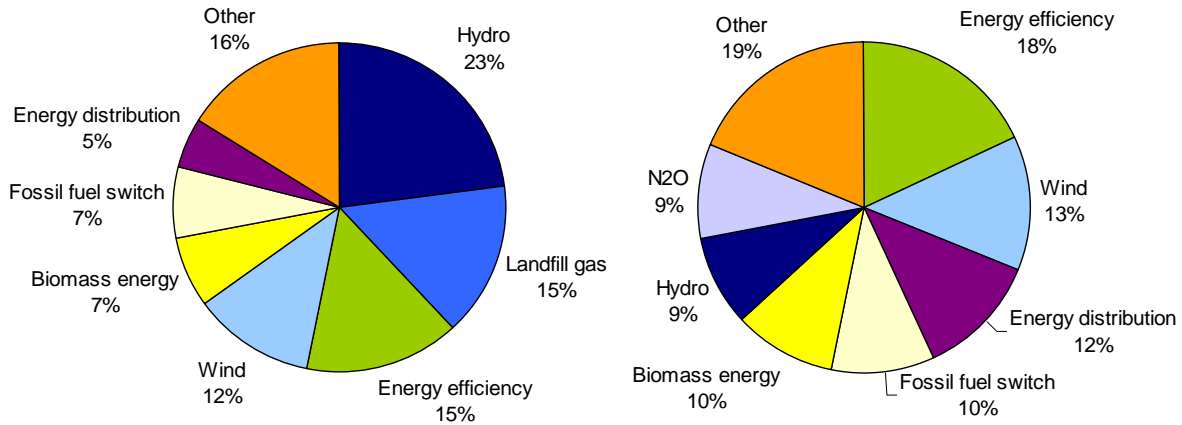


Figure 14: Distribution of JI project by type (source: Caisse des Dépôts 2008)

When comparing numbers of projects to volume of credits, N₂O and HFC projects appear to be those generating the largest number of credits, although the quantity of such projects developed is small. Conversely, renewables or energy efficiency projects are much more modest in terms of the emission reductions they achieve.

3.3.3. Project types targeted by 2008 carbon funds

Carbon funds launched in 2008 have followed last year's trends (Figure 15), targeting mainly renewable and energy efficiency type projects. Renewables become more and more attractive to investors providing upfront financing because of the possibility to get additional revenue from energy sales, and efficiency measures are often a low-cost solution to reduce carbon emissions.

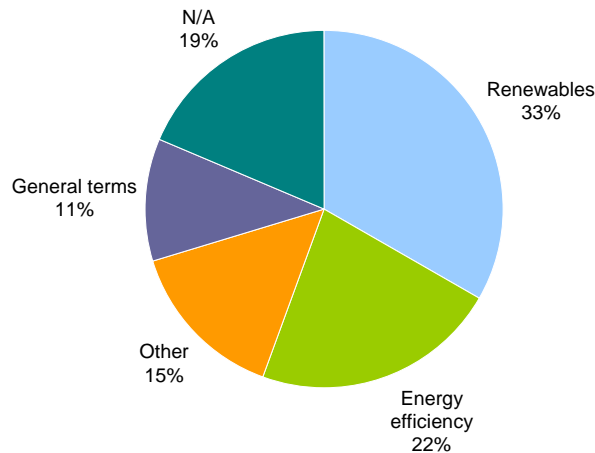


Figure 15: Breakdown of investment target areas selected by new carbon funds
Note: a fund can be interested in one or multiple target areas

Some of the 2008 funds have additional investment objectives, such as fuel switching, fugitive methane including landfill gas and coal bed methane, land use and land use change, water resource and infrastructure, and biofuels development.

One tenth of these new funds do not provide specific information on the sectors they target but use general terms, for example “climate change mitigation and adaptation projects,” or “reduction of negative ecological impact.” Behind these general areas, a wide range of project types can be found. These range from the often criticised efficient coal-fired plants through debated Reducing Emission from Deforestation in Developing Countries (REDD) to relatively problematic emission reduction programmes (so-called Programmes of Activities—PoA).

REDD and PoA still require many clarifications before they become mainstream CDM activities. So far, development banks and governments have played a major role in promoting these types of projects. Currently, the following are examples of relevant carbon vehicles:

- **REDD:** Amazon Fund (BNDES) and Forest Carbon Partnership Facility (World Bank)
- **PoA:** Development Carbon Fund, Climate Investment Funds and Carbon Partnership Facility (World Bank), SECCI initiative (Inter-American Development Bank), and FOMECAR (Mexican Carbon Fund)

In all, by not limiting the targeted sectors, carbon investors remain open to various investment opportunities. This gives them the flexibility to diversify their project portfolio, while simultaneously reducing the associated-risks.

Finally, funds that did not specify investment goals are usually those interested only in carbon credits. They seek pools of carbon assets often without following their origin (i.e., project type). Interestingly, taking into account all 2008 funds, there is less capital targeted at off-take ERPAs than the capital dedicated to upfront project financing.

Figure 16 shows the distribution of capital raised in 2008 by financing type. Nearly half of all carbon funds launched in 2008 (Figure 17) plan to secure a supply of credits through direct financing. In most cases, these direct financing funds are managed by experienced and renowned agents in the carbon market.

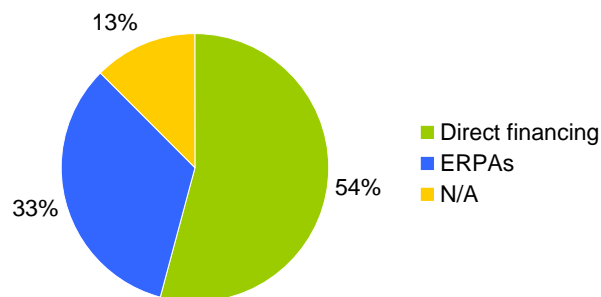


Figure 16: Distribution of capital among 2008 carbon vehicles

Manager	Carbon Fund	Financial involvement
South Pole Carbon Asset Management	Gold Carbon Capital Fund	Direct Financing
Ecoeye	Korea Carbon Fund	Direct Financing
3C Consulting	Climate Change Investment SA II	Direct Financing
IFCI Venture Capital Funds	Green India Venture Fund	Direct Financing
ADB	ADB climate change fund	Direct Financing
CFB World Bank	Carbon Partnership Facility	Direct Financing
Brazilian Gov.	Brazilian Climate Change Fund	Direct Financing
Irish Gov.	Irish Carbon Tender	ERPAs
Sri Lanka Gov.	Sri Lanka Carbon Fund	ERPAs
ADB	Future Carbon Fund	ERPAs
NEFCO	NEFCO Carbon Fund	ERPAs
Greenstream Network	Nordic Carbon Fund	ERPAs
Green Ventures International	India Carbon Fund	ERPAs
Conning Asset Management (Europe) Limited	Post 2012 Carbon Fund	ERPAs
3C Consulting	Carbon Opportunity Fund	N/A
3C Consulting	Singapore Climate Change Investment	N/A
IGB Alternative Investments	IGB Carbon Fund	N/A
GICA	Green Initiative Carbon Asset	N/A
Sustain Capital	Sustain Capital Carbon Fund	N/A
Arcelor Mittal	Carbon Fund (Arcelor Mittal)	N/A
MAN	MAN Environmental Capital Opportunities	N/A

Figure 17: Financial involvement of 2008 carbon vehicles

4. Future evolution of carbon funds

The future performance and evolution of carbon funds is shaped by multiple factors that can be grouped into the following components (Figure 18):

- Global market environment (including EU climate change policy, international emission trading schemes, U.S. programme on curbing domestic emissions, and post-Kyoto climate change regime)

- Development of the CDM and JI markets
- Impacts of the current financial crisis

Figure 18 presents these factors and their interactions. This is followed by an overview of each factor.

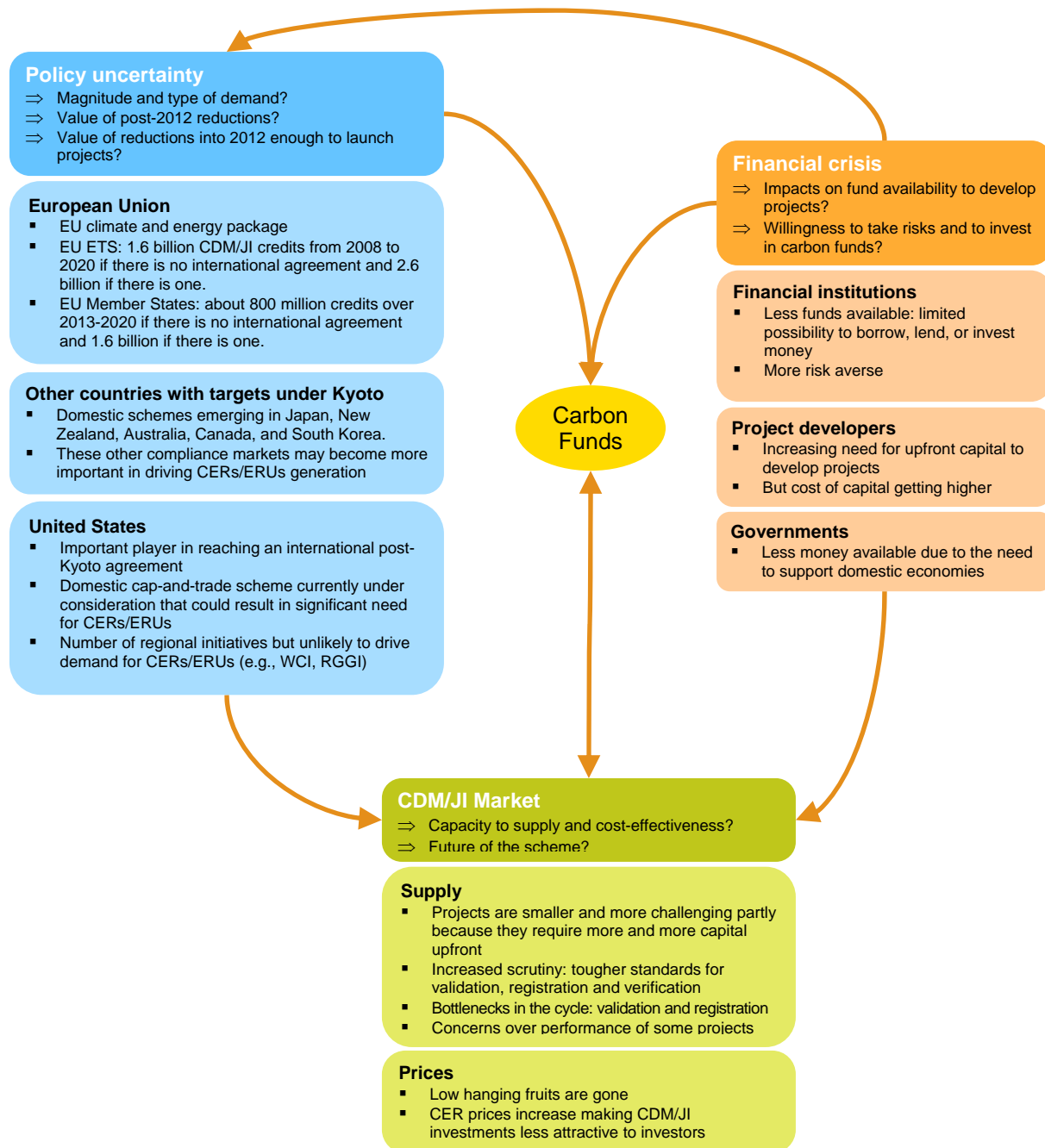


Figure 18: Factors shaping the current and future performance of carbon funds

4.1. Global market environment

4.1.1. Post-2012 climate change policy

The Kyoto protocol has shaped the international carbon market as we know it. It is a requirement on developed countries to abate GHG emissions, is well defined, and has governed mechanisms to deliver part of the reductions needed from project activities. The lack of agreement on a long-term international climate policy framework therefore renders new CDM/JI project opportunities less and less attractive to potential carbon investors.

However, some expect that the carbon market will continue to thrive thanks to an increase in the number of regional, sub-national, and national mandatory and voluntary schemes expanding the demand for emission reductions, irrespective of developments within the United Nations Framework Convention on Climate Change (UNFCCC). Accordingly, several development banks—again playing their role of pioneer—have launched procurement vehicles aiming to value post-2012 emission reductions: Future Carbon Fund (ADB), Forest Carbon Partnership Facility (World Bank), and Post 2012 Carbon Fund (consortium of four major investment banks—EIB, Caisse des Dépôts, KfW Bankengruppe and the Nordic Investment Bank—with Instituto de Crédito Oficial-ICO).

Following their example, other institutions announced their willingness to set up similar initiatives. Natixis has launched the European Kyoto Fund which will invest in all types of carbon assets, including post-2012 emission reductions, in line with the long term emission reduction target announced by the EU. Greenstream Network is in the process of introducing a fund focused on the post-2012 market. Also, the government of Finland has allocated €30 million to purchase post-2012 carbon credits.

Over the next two years, the international climate policy framework and domestic regulations are expected to take shape, with carbon markets playing a central role. This should provide a clearer idea of the longer-term demand for international carbon credits, and how the revised supply structure (see Development of CDM/JI markets) could meet it.

4.1.2. European policy

The use of international credits in the EU is overall highly dependent on whether an international agreement is reached for the post-2012 period. Indeed, if this happens, the EU will commit to reducing its emissions by 30% (instead of 20% with no agreement) by 2020 compared to 1990. The additional effort that will result from this more stringent target will be achievable by using up to 50 percent of Kyoto credits.

The EU Emissions Trading System

The European Union has decided to extend the second phase import limit on CERs/ERUs to the combined period of second and third phases of its carbon trading scheme (i.e., 2008-2020). The limit on use of international credits results from a compromise between the initial proposal of the European Commission (i.e., 1.4 Gt CO₂) and the amendment of the Environmental Committee from October 2008 (i.e., 1.6-1.8 Gt CO₂). In the absence of a post-2012 deal, existing EU ETS operators will be able to import 1.5 billion credits in total between 2008 and 2020. Additional sectors and aviation will be allowed to source 40 and 85 million credits respectively. Hence, the

total number of credits allowed in the EU ETS between 2008 and 2020 will be around 1.6 billion with no post-2012 agreement (2.6 billion if an agreement is reached).

EU member states

On 12 December 2008, the European Council decided to allow Member States to use UN credits up to 3 percent of their 2005 verified emissions annually through 2020. This is in agreement with the initial EC proposal and less stringent than the amendment proposed by the Environment Committee (i.e., 8 percent of 2005 emissions for 2013-2020). Some EU countries will be allowed to use additional credits amounting to 1 percent of their 2005 emissions. Overall, Member States will be able to source almost 800 million credits in total between 2013 and 2020, if no international agreement is reached, otherwise the limit will double.

4.1.3. New cap-and-trade schemes in countries with targets under the Kyoto Protocol

Some analysts predict that due to the restrictions described above, other compliance markets may become more important in driving CERs/ERUs generation. These include:

- **Japan**, which launched a trial carbon emissions trading scheme in October 2008;
- **New Zealand**, where the GHG trading scheme has started in 2008;
- **Australia**, whose ETS is coming into force in 2010⁶;
- **Canada**, where an ETS is expected to be operational in 2010;
- **South Korea**, which is working on its ETS, with specifics yet to come.

4.1.4. United States policy

In June 2008, the United States Congress blocked an attempt to establish a domestic cap-and-trade scheme. Yet, considering the new draft climate change bill unveiled by the House Democratic leaders in October 2008, and strong words of support from president-elect Barack Obama, optimists anticipate that climate legislation will be introduced within the first year or two of the next presidency.

The proposed draft discussion paper by the House of Energy and Commerce Committee, announced on October 7, 2008, aims at an 80 percent emission reduction by 2050, starting with a cap on emissions from transportation and power plants. By 2024, emitters would be allowed to fulfil up to 35 percent of their compliance cap with domestic and international offsets, although the amount of offsets is severely restricted at the start of the program, growing to 35 percent over time. Nonetheless, ICF anticipates that overall demand for international credits from the U.S. will be relatively small in the first years of the scheme as the cap is set much closer to anticipated baseline emissions levels.

The proposal is expected to be refined in coming months, but it has already reinforced hopes that Congress will significantly address, and perhaps even pass, climate legislation by 2009. So

⁶ A White Paper released on 15 December 2008 sets no limit on use of international credits in the Australian ETS.

far, regions and cities are taking the lead in abating climate change but these initiatives are unlikely to be a significant driver for the demand for UN credits:

- Regulatory initiatives
 - ♦ *Western Climate Initiative*
 - ♦ *California Global Warming Solutions Act (AB 32)*
 - ♦ *Regional Greenhouse Gas Initiative*
 - ♦ *Midwest Greenhouse Gas Reduction Accord*
- Other initiatives
 - ♦ *Voluntary initiatives* (e.g., Mayor's Climate Protection Agreement) *and individual vehicles* funding community-based clean energy and climate mitigation projects (e.g., Colorado Carbon Fund, San Francisco Carbon Fund).

4.2. Development of CDM/JI markets

One emerging trend in carbon markets is that the buyers' demand has been outpacing the supply. Indeed, in 2007 Caisse des Dépôts (2007) had already reported estimates that less than 50 percent of the capital raised by carbon funds had been invested. This year has brought downward revisions of supply forecasts due to, in particular, increased scrutiny and capacity constraints at validation, registration, and verification stages in the CDM (and to some extent JI) cycle.

As far as project size is concerned, it seems that smaller projects are coming into the pipeline. These result in a reduction in the overall number of carbon credits generated as well as a possible increase in implementation and performance risks. Hence, uncertainties about the carbon credit potential of the CDM and JI pipeline will subsist.

In the midst of negotiating a post-Kyoto agreement, there have been discussions on improving existing CDM and JI project mechanisms. The CDM scheme needs to find a way of dealing with several problems *inter alia* uneven geographical distribution, long and complex administration, and potential scope expansion. JI is also expected to undergo some alterations. So far it has been in the shadow of the CDM, having only a tiny number of projects registered compared to the CDM project pipeline (JI—175 and CDM—3967)⁷.

In terms of expanding the scope, many proposals call for including Carbon Capture and Storage (CCS) technology, Reducing Emissions from Deforestation in Developing Countries (REDD), Programmes of Activities (PoA) approaches, or nuclear energy activities into the future CDM framework. All of these issues will have to be resolved in the upcoming meeting on the post-Kyoto framework in Copenhagen 2009.

4.3. Implications of the current financial crisis

The financial crisis has become the prevailing concern for market participants in the last three months as its effects on the economy and the carbon market are emerging. In this context,

⁷ According to the UNEP-Risoe Web site last updated on October 1, 2008.

investors, developers, and lenders face a situation where the availability of capital—the willingness and ability to spend—is more and more constrained.

Banks are having serious problems with liquidity. This, combined with the current reorganisations, mergers, acquisitions, or nationalisations that are taking place in the market, is likely to alter their carbon finance operations. Investors with limited financial resources are becoming selective and risk averse in their investment decision-making. This further affects the ability of project developers with little track record and limited equity to raise capital to develop projects. Additional sources of funding based on expected carbon revenues could become hence even more critical.

4.4. Predicted changes for carbon funds

Taking into account the multiple factors described above, it is clear that carbon funds operate in a complex environment and that their future reaction to ongoing changes in the market remains difficult to assess. Yet, based on the detailed analysis of the current market context and the historical evolution of carbon funds, ICF presents probable ways for their prospective development.

4.4.1. The financial crisis is going to impact newly created carbon funds

Reasoning:

1) Limited private capital inflow

With the financial sector undergoing serious problems, the overall private inflow of capital is likely to slow down. Private investors that have made commitments to provide capital into recently launched carbon funds will face difficulties in leveraging their equity. But, generally, they will also require a higher return on investment in order to compensate for the increased cost of capital. As a result, newly set up private funds might seek a higher return on investment, especially if their plans include capital-intensive projects (e.g., clean technologies), or might move into ERPAs as a way of reducing investment risk.

2) Governmental investment at the crossroads

One could assume that governments may again take on the leading position and play a crucial role in the prospective development of carbon funds. Indeed, the recent decision of the European council is in favour of UN credit import from Member States. In addition, Member States are likely to have greater investment capacity than EU ETS participants.

However, the current credit crunch has put rescuing the financial system on the top of most governmental agendas. In the short term, governments and central banks might therefore prioritise use of resources on supporting economic activity, strengthening companies balance sheets, and provide guarantees and liquidity to the market. This might affect overall public fund availability for other investments including carbon instruments purchasing programmes.

Also, involvement in carbon investment vehicles of governments from non-EU Annex I countries greatly depends on what emission reduction targets they will commit to and the structure of that commitment. This illustrates how important a binding climate regime is for the growth of the carbon market and its associated investment vehicles.

Result:

- Newly created carbon funds will probably suffer from a lack of financial resources and might find it difficult to reach their target capital.

4.4.2. The creation of new funds will likely slow down

Reasoning:

Although the number of carbon funds has grown steadily over the last decade, the progression of cumulative secured capital under their management has been slowing down during the past few years. In the coming years, taking into account the current financial turmoil and its effects on the whole economy, we can expect this trend to continue.

In addition, current uncertainties around the post-2012 period make investments in CDM/JI projects less attractive and more risky. Indeed, the CDM/JI mechanisms have been so far a cost-effective means for companies to achieve emission reductions and comply with their targets under the EU ETS. However, looking forward, it is difficult to assess whether these mechanisms will be equally valued after 2012. The quantity of CDM/JI credits that will be allowed in Europe (EU ETS and Member States) is still uncertain and will be determined by whether an acceptable post-2012 international climate change policy framework will be agreed. In addition, most domestic cap and trade schemes being designed outside Europe have still not set in stone the quantity of international offsets participants will be allowed to use towards their commitments. This overall uncertainty regarding the use of international offsets makes it harder for investors to decide whether to invest in CDM/JI projects or not.

Result:

In the current context, any new fund would not be able to deliver significant quantities of credits for 2008-2012 and they would face a high level of uncertainty regarding the post-2012 period. Consequently, ICF envisages a slow down in carbon fund creation and investments in the next few months as investors wait for clear policy and market signals.

4.4.3. Compliance buyers and banks adopting a more conservative approach will leave opportunities for carbon funds to seize

Reasoning:

In countries with existing ETSs, binding long-term emission reduction targets have made compliance buyers the main force in the demand for carbon credits. Yet, considering the uncertainties around the future of international offsets mechanisms (especially the CDM) and domestic policies limiting their import, these compliance buyers are likely to opt for a more short term approach. To fulfil their obligations under the ETS, they will increasingly seek opportunities to purchase credits at hand with early issuance dates rather than investing in projects delivering credits far beyond 2012. Also, considering their potential financial limits and a greater aversion to risk, compliance buyers can be less inclined to deal with projects that tend to be smaller in size or developed by companies with a lower credit rating.

A similar conservative approach has been adopted recently by some key financial institutions that have been actively involved in the carbon market so far. In addition, the financial crisis has

caused the disappearance or consolidation of some of the most active trading desks in the carbon markets, especially on the primary carbon credit market. In general, risk aversion has heightened significantly in the banking sector, making it more challenging for banks to provide upfront funding—equity, debt, or even prepayment—to companies with a low credit rating and against carbon credits which are priced in a still relatively immature and policy driven market.

Result:

This more conservative approach amongst traditional players will unleash opportunities for carbon funds with an ability to take on more risks and/or provide pre-payment. Indeed, banks might have a reduced ability to invest in carbon projects and governments are likely to take a conservative approach due to increased scrutiny on the way they invest public money. In addition, some funds may drop out due to insufficient funding, or due to a limit on the number of contracted projects available. Therefore, carbon funds with a good level of secured capital and flexibility in investment financing will reinforce their market position.

4.4.4. New cap-and-trade schemes, provided they come into effect, might result in funds set up to serve buyers beyond Europe**Reasoning:**

Independent from the post-Kyoto negotiations, several countries (described in sections 4.1.3 and 4.1.4) have announced that they plan to introduce their own cap-and-trade schemes. In their initial designs these countries allow international credits as a compliance option. Even though most of these prospective ETSs are still without defined import limits, they have already sent signals that they will play a role in the future demand for UN credits. The financial crisis may lead to a relaxation in credit import limits as a way of alleviating the financial burden of the new carbon policies. The design of these domestic policies is being closely observed by carbon market participants, since such schemes can provide additional certainty for investments in CDM/JI projects beyond the post-Kyoto and EU ETS drivers.

Result:

New emissions trading schemes in developed countries will open up the carbon market to new funds likely managed by local agents and serving these specific markets. However, the number of carbon vehicles that will actually be set up is highly dependent on the level of demand defined by new cap-and-trade schemes and the extent to which international offsets will be allowed as a compliance option.

4.4.5. Direct financing will likely play a greater role in carbon fund strategies**Reasoning:**

Financial resources are indeed available for emission reduction projects. However, committing them to carbon credit investments and transactions has become increasingly challenging. Investors have found it increasingly difficult to find large and robust carbon credit projects with relatively attractive prices through low risk off-take transactions. As described in this report, the new “generation” of projects is smaller, undertaken by new local developers with lower credit rating and smaller balance sheets. Hence, the carbon market is requiring more investors that

are willing to invest equity—or provide debt—at initial stages of project development. The current credit crisis, and its implications for the cost of capital, only exacerbates that challenge.

Also, as we get closer to 2012 and the end of the Kyoto Protocol period, the incremental revenue that project developers can obtain from the mere sale of carbon credits is shrinking. Moreover, for any new projects being considered at the moment, any delay can have a significant impact; for instance, six months' delay in the first credit issuance (which is far from uncommon) could reduce by 20 percent the value of the carbon credit stream expected by the end of 2012. This is creating an even more challenging context for any buyer to engage in a primary carbon credit transactions.

Result:

Limitations around the availability of robust projects and financing sources are driving investors to engage at an early stage of project development and diversify revenues associated with each single deal. Existing carbon funds with secured capital and the mandate to provide direct financing—especially equity—are well positioned to fill a vital need at this critical time while better managing their exposure to carbon credit revenues. Direct financing has been steadily gaining importance as part of the investment approach of carbon funds and we can expect that it will take on an increasingly central role.

4.4.6. Carbon funds are starting to diversify their investment portfolio

Reasoning:

In the face of the uncertainties around the future CDM/JI market, existing carbon vehicles are expected to evolve from the traditional carbon fund models towards a more diversified risk strategy that offers a large range of credit options. Some funds already include other types of credits such as EUAs or VERs in their portfolio, thereby opening themselves up to a wider range of sectors and potential investors. This trend will be reinforced by a growing demand among industrial players for voluntary offsets either in order to differentiate themselves, or in order to prepare for a possible regulatory climate change framework. In general, such an extension of carbon investing strategies allows funds to reduce their exposure to uncertainties around the future of CDM/JI markets.

Funds have also started to invest part of their capital in non-CDM/JI projects such as clean coal and renewable energy companies. In particular, funds investing ready cash in clean technology vehicles are well positioned to win good deals. Recently, the sector has struggled to get financing for wind farms, solar parks, and biofuel plants. Therefore, carbon funds could fill the gap by providing capital for project completion to developers of these types of projects that have power purchase agreements or other means of providing stable cash flow.

The drive towards more equity investment described above will also contribute to that diversification strategy.

Result:

Carbon funds that originally concentrated only on carbon credits from CDM/JI projects will look for other options to secure their existence and ensure continuous capital flow.

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6. Appendices

6.1. List of carbon vehicles included in the study

Figure 19: List of carbon vehicles included in the study

No	Funds	Launched in
1	ERUPT	2000
2	Finnish CDM/JI pilot programme	2000
3	WB Prototype Carbon Fund (PCF)	2000
4	CERUPT	2001
5	CAF-Netherlands CDM Facility	2002
6	WB Netherlands CDM Facility (NCDMF)	2002
7	SICLIP (Swedish CDM/JI Programme)	2002
8	WB BioCarbon Fund	2002
9	WB Community Development Carbon Fund (CDCF)	2002
10	Austrian JI/CDM Programme	2003
11	Baltic Sea Region Testing Ground Facility (TGF)	2003
12	Netherlands Emissions Reduction Co-operation Fund (NERCOF)	2003
13	Greenhouse Gas-Credit Aggregation Pool (GG-CAP)	2003
14	Rabobank-Dutch Government Carbon Facility	2003
15	WB Italian Carbon Fund (ICF)	2003
16	Danish Carbon.dk	2004
17	Austrian CDM Project and CER Sale Facility Agreement	2004
18	EcoSecurities Standard Bank—cancelled	2004
19	FE Global-Asia Clean Energy Services	2004
20	Flemish Government JI/CDM Tender	2004
21	ICECAP Carbon Portfolio	2004
22	IFC Netherlands Carbon Facility (INCaF)	2004
23	Japan Greenhouse Gas Reduction Facility (JGRF)	2004
24	KfW Carbon Fund	2004
25	WB Netherlands European Carbon Facility (NeCAF)	2004
26	WB Danish Carbon Fund (DCF)	2004
27	WB Spanish Carbon Fund (SCF)	2004
28	European Carbon Fund (ECF)	2005

No	Funds	Launched in
29	Belgian CDM/JI Tender	2005
30	Climate Change Capital Carbon Fund I	2005
31	CAF-Spain Carbon Initiative (Iniciativa Iberoamericana del Carbono)	2005
32	Japan Carbon Facility	2005
33	Merzbach Carbon Finance (MCF)	2005
34	Climate Cent Foundation	2005
35	Argentine Carbon Fund—reconfigured	2005
36	Trading Emissions plc	2005
37	Grey K Environmental Fund	2005
38	WB Umbrella Carbon Facility	2006
39	Multilateral Carbon Credit Fund (MCCF)	2006
40	Climate Change Capital Carbon Fund II	2006
41	Fondo de Carbono para la Empresa Española	2006
	Trading Emissions plc Tranche 2*	2006
42	Portuguese Carbon Fund	2006
43	FOMECAR Mexican Carbon Fund	2006
44	China Methane Recovery Fund	2006
45	EDF Carbon Fund	2006
46	CCM Carbon Assets Fund	2006
47	Finnish Carbon Procurement Programme – Finnder*	2006
48	WB Carbon Fund for Europe	2007
49	Eco-Way Carbon Fund	2007
50	Sindicatum Carbon Fund	2007
51	Asia Pacific Carbon Fund	2007
52	Bunge Emissions Fund	2007
53	KfW-EIB	2007
54	CARE Brasil Social Carbon Fund	2007
55	The Fine Carbon Fund	2007
56	Luso Carbon Fund	2007

* Not treated as a separate fund, since it is the continuation of the first fund launched by Trading Emissions (36)

* Not treated as a separate fund, since it is the continuation of the Finnish JI/CDM pilot programme (2)

No	Funds	Launched in
57	Kyoto Mechanism Credit Acquisition	2007
58	ADB Clean Energy Financing Partnership Facility	2007
	Belgian CDM/JI Tender (2nd Tender)**	2007
59	Norwegian CDM/JI Tender	2007
60	Merzbach Carbon Finance Fund	2007
61	Peony Capital Carbon Fund	2007
62	FE Global Clean Energy Services Fund IV	2007
63	European Kyoto Fund	2007
64	Carbon Opportunity Fund	2008
65	Singapore Climate Change Investment	2008
66	Brazilian Climate Change Fund	2008
67	ADB Climate Change Fund	2008
68	Carbon Partnership Facility	2008
69	Carbon Fund (Arcelor Mittal)	2008
70	Future Carbon Fund	2008
71	IGB Carbon Fund	2008
72	Green India Venture Fund	2008
73	India Carbon Fund	2008
74	Green Initiative Carbon Asset	2008
75	NEFCO Carbon Fund	2008
76	Nordic Carbon Fund	2008
77	Sustain Capital Carbon Fund	2008
78	Climate Change Investment SA II	2008
79	Sri Lanka Carbon Fund	2008
80	Gold Carbon Capital Fund	2007
81	Post 2012 Carbon Fund	2008
82	Korea Carbon Fund	2008
83	Irish Carbon Tender	2008
84	MAN Environmental Capital Opportunities	2008

** Not treated as a separate fund, since it is the continuation of the first fund launched by the Belgian Government (29)

6.2. List of carbon vehicles not included in the study

Figure 20: List of carbon vehicles not included in the study

No	Funds	Launched in
1	African Land and Livelihoods carbon fund (Terra Carbon Capital)	2008
2	CO ₂ Opportunities Fund (Deutsche Bank)	2008
3	Ecolutions and Climate Corporation CER global fund	2008

7. About ICF

ICF International (“ICF”) is a leading international management, technology, and policy consulting firm, with headquarters in Fairfax, Virginia and offices across the US, Canada, Europe, Asia, and South America. Since 1969, ICF has been serving government at all levels, major corporations, and multilateral institutions. More than 3,000 employees serve these clients worldwide. The firm's services are organized around seven markets: climate change, energy, environment, transportation, social programs, defense, and homeland security.

Climate change has been a core competency of ICF since the mid-1980s. Globally, around 300 of our employees have experience advising corporate clients to help develop carbon strategies or working with our government clients to devise and implement climate change policy. Over the past two decades, ICF International has earned a reputation in the field of climate change for our analytical rigor, in-depth market expertise, and technical integrity through hundreds of assignments undertaken for:

- **Leading companies**, including over 60 companies among the Global FT 500 (the world's largest companies by market capitalization), and climate-friendly technology suppliers that have recognized climate change as an issue which will help to define their competitive advantage.
- **Financial institutions** on Wall Street and in Europe with an interest in the valuation and reputation impacts of climate change
- **Multilateral institutions** such as the European Commission, Global Environment Facility, Organization for Economic Cooperation and Development, International Energy Agency, regional development banks, and United Nations agencies
- **National and local governments** in more than 50 countries including the United Kingdom, Ireland, Canada, Australia, New Zealand, Ukraine, Ukraine, and the United States.

ICF possesses considerable climate change experience and offers the full spectrum of services in the area of carbon advisory, including:

- **Carbon management and carbon strategy:** greenhouse gas (GHG) emissions measurement and reporting, GHG emissions abatement cost analysis, and advice on government and industry voluntary programs to reduce energy and carbon intensity.
- **Policy analysis:** Advice on design and impacts of climate change policies including national regulations and GHG emissions trading systems.
- **Establishment/management of carbon investment vehicles:** ICF is the Carbon Manager for the Multilateral Carbon Credit Fund (MCCF) and has a long track record in working with buyers, sellers of carbon credits or initiators of carbon vehicles.
- **Work on carbon related issues with financial institutions:** ICF's experience with the financial community cuts across both private and public sector entities and includes design and implementation of carbon finance instruments, carbon management and carbon credits.
- **Advisory on carbon credits:** ICF has internationally-recognized in-depth expertise on carbon credits. ICF has provided strategic and due diligence services on more than 300 CDM/JI, EU ETS and voluntary carbon credit projects.
- **Carbon price modeling:** ICF helps companies base their investment analysis on a credible short and medium and long term forecast of the carbon price.

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